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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---------------|----------------------|---------------------|------------------|
| 10/824,722 | 04/15/2004 | Tien-Hsin Chao | G&C 176.18-US-U1 | 6728 |
| 22462 75 | 90 07/13/2005 | | EXAMINER | |
| GATES & COOPER LLP | | | ASSAF, FAYEZ G | |
| HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045 | | 1050 | ART UNIT | PAPER NUMBER |
| | | 2872 | | |

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Application No. Applicant(s) 1/824,722 C/HAO ET AL. | | | | A | | | |
|--|--|--|--|--------|--|--|--|
| Examiner Fayez G. Assaf 2872 - The MAILING DATE of this communication appears on the cover sheet with the correspondence address − Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ③ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. E assessor of time may be available under the provisions of 37 CFR 1.135(a). In re-event, however, may a realy be timely filed If the period for realy is pecified above, the maintening data of the correspondence address − If the period for realy is pecified above, the maintening data of the communication of | | Application No. | Applicant(s) | 112 | | | |
| Fayez G. Assaf 2872 | | 10/824,722 | CHAO ET AL. | | | | |
| Preiod for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Educations of time may be evaluate used the provision of 30°CFR 1 130(s). In or event, however, may a reply be timely filled and the provision of 30°CFR 1 130(s). In or event, however, may a reply be timely filled to reply specified above is lice shan hirty (30° days, a reply while in the stabulary minimum of biliny (30°) days will be considered timely. If the partied for reply specified above is lice shan hirty (30° days, a reply while in the stabulary minimum of biliny (30°) days will be considered timely. If No partied for reply specified above is lice shan hirty (30°) days, a reply while in the stabulary minimum of biliny (30°) days will be considered timely. If No partied for reply specified above is lice shan hirty (30°) days, a reply while in the second parties of the scenario of the communication. Fallular to reply while in the stable of the communication of the communication. A provided the second of the communication of the communication is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Exparte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) | Office Action Summary | Examiner | Art Unit | | | | |
| A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ② MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Ederates of lines may be available unified the provisions of 37 CFR 1.13(a). In no event, however, may a riply be limitly filled Ederates of lines may be available unified the provisions of 37 CFR 1.13(a). In no event, however, may a riply be limitly filled Ederates of lines may be available unified the provisions of 37 CFR 1.13(a). In no event, however, may a riply be limitly filled Ederated of the riply specified above, the maximum detailutory point of the statutory minimum of thinly (30) days will be considered limitly. If NO period for rigly is specified above, the maximum detailutory periods will apply and via septims \$1, (9) MONTHS from the mailing date of this communication. Fashe to in right with the statute of the communication, seen 2 filled and 1.13(a) a | | Fayez G. Assaf | 2872 | | | | |
| THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provision of 3 CFR 1.15(6). In no event, however, may a reply be timely filed after SIX (8) MONTES from the mailing date of this communication. It is a provision of the provision of the provision of 3 CFR 1.15(6). In no event, however, may a reply be timely filed after SIX (8) MONTES from the mailing date of this communication. It is a provision of the prov | | appears on the cover sheet w | vith the correspondence add | dress | | | |
| 1) Responsive to communication(s) filed on 17 June 2005. 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final. 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4 Claim(s) 1-31 is/are pending in the application. 4a) Of the above claim(s) 1-5.12-15 and 21-25 is/are withdrawn from consideration. 5 Claim(s) 6-11.16-20 and 26-31 is/are rejected. 7 Claim(s) 6-11.16-20 and 26-31 is/are rejected. 7 Claim(s) is/are objected to. 8 Claim(s) 6-11.16-20 and 26-31 is/are rejected. 7 Claim(s) material are subject to restriction and/or election requirement. Application Papers 9 The specification is objected to by the Examiner. 10 The drawing(s) filed on 4/15/04; 8/30/04 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☐ All b ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). *See the attached detailed Office action for a list of the certified copies not received. Attachment(e) 1) ☑ Notice of References Cited (PTO-892) 3) ☑ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 4) ☐ Interview Summary (PTO-413) Paper Not(s)/Mall Data. 4) ☐ Interview Summary (PTO-413) Paper Not(s)/Mall Data. 5 Notice of Interp | THE MAILING DATE OF THIS COMMUNICATION - Extensions of time may be available under the provisions of 37 CF after SIX (6) MONTHS from the mailing date of this communication. If the period for reply specified above is less than thirty (30) days, and If NO period for reply is specified above, the maximum statutory period. Failure to reply within the set or extended period for reply will, by so Any reply received by the Office later than three months after the new the set of the set | DN. R 1.136(a). In no event, however, may a t. a reply within the statutory minimum of thi eriod will apply and will expire SIX (6) MO tatute, cause the application to become A | reply be timely filed irty (30) days will be considered timely NTHS from the mailing date of this con BANDONED (35 U.S.C. § 133). | | | | |
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| 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☐ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☑ Notice of References Cited (PTO-892) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☑ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) ☐ Notice of Informal Patent Application (PTO-152) | 11)☐ The oath or declaration is objected to by the | e Examiner. Note the attache | d Office Action or form PT | O-152. | | | |
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| 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) Notice of Informal Patent Application (PTO-152) | a) All b) Some * c) None of: 1. Certified copies of the priority docum | nents have been received. | | | | | |
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| 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) 5) Notice of Informal Patent Application (PTO-152) | | · · · · · · · · · · · · · · · · · · · | | | | | |
| , , , , , , , , , , , , , , , , , , , | 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SE | 5) Notice of | Informal Patent Application (PTO | -152) | | | |

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DETAILED ACTION

Election/Restrictions

Applicant's election of Species II: claims 6-11, 16-20 and 26-31 in the reply filed on 6/17/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

Claims 7, 17 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The C-axis is not defined in the claims. As such, the metes and bounds of the claims cannot be ascertained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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Claims 6-11, 16-20 and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaji et al. (US 6,088,321) in view of Gladney et al. (US 2004/0090899 A1).

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Regarding claims 6, 7, 8, 10, 16, 17, 19, 26, 27, 28 and 30, Yamaji discloses a holographic memory system comprising: (a) a photorefractive crystal (10 of Fig. 10) configured to store holograms; (b) a single laser diode (1 of Fig. 10) configured to emit a collimated laser beam to both write to and read from the photorefractive crystal; and (c) one or more mirrors configured to steer a reference beam (5 of Fig. 10), split from the collimated laser beam, at high speed to the photorefractive crystal. Yamaji does not teach the mirror being MEMS.

However, Gladney teaches such a mirror for scanning the reference beam (see Fig. 9).

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to utilize the mirror of Gladney in the invention of Yamaji since the MEMS mirror is efficient compact and consumes low power.

Regarding claim 9, 18 and 29, Yamaji or Gladney disclose the MEMS mirror being varied by a small increment with respect to each new data page to specifically orient the reference beam to the photorefractive crystal is an angular multiplexing scheme.

Regarding claim 11, 20 and 31, Yamajai and Glandly inherently disclose the holographic memory system being used with both analog and digital holograms.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tayy Asseit

Fayez G. Assaf Primary Examiner Art Unit 2872

7/11/2005